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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/724,918	USUI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael K. Luhrs	2824	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--  
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/14/2005.
2. ☒ The allowed claim(s) is/are 1-12 and 14.
3. ☒ The drawings filed on 07 October 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date <u>4/14/2005</u></li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____.</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input checked="" type="checkbox"/> Other <u>search update</u>.</li> </ol> |
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**DETAILED ACTION**  
**EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Attorney Borodach on 5/18/05.

3. **Cancel claim 13.**

The application has been amended as follows:

**Claim 13 has been cancelled.**

*Allowable Subject Matter*

4. Claims 1-12 and 14 are allowed.

5. The following is an examiner's statement of reasons for allowance: applicant's step of *irradiating plasma onto the first conductive wiring layer, the circuit element and the conductive wires* (lines 11-12, claim 1) followed by, the selective removal of the conductive film at the rear surface to form the second conductive layer, was not taught or suggested by the prior art. Dependent claims 2-12 and 14 dependent on claim 1 are thereby also allowed given the allowable claim 1 reasoning indicated above.

6. The art discussed previously is Haji et. al. USPN 5,909,633 who irradiates plasma onto *the first conductive wiring layer*, i.e. the pads, and includes the semiconductor element '12' i.e. circuit element, but wire bonds *after* the irradiation, (see Figures 5 to 6), hence fails to irradiate the actual wires when irradiating the plasma onto *the first conductive wiring layer and the semiconductor chip*. The examiner now provides Suzuki et. al. USPN 6,815,746 who are explicit in teaching that irradiating the conductive wiring, the chip, and the wires is performed altogether, in column 15, line 57+. Yet Suzuki et. al. show in Fig. 27 that the rear substrate surface already appears ready for bump formation, thus Suzuki et. al. lack the selective removal of a conductive film to form the second conductive layer after irradiating with plasma, (because the substrate backside is already prepared to form the bumps, see Fig. 18).

Art Unit: 2824

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

*Response to Argument*


8. Examiner agrees with Applicant's REMARKS (p. 6 of 7), dated 4/14/2005, that, "In addition, neither the Ohta et al. patent or the Haji et al. patent discloses forming a second conductive wiring layer, after the irradiation, by selective removal of the conductive film at the rear surface.


*Conclusion*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael K. Luhrs whose telephone number is 571-272-1874. The examiner can normally be reached on M-F, 8-5.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard T. Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Michael K. Luhrs  
5/19/05

  
OLIK CHAUDHURI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800